

Application No.: 10/812,294

3

Docket No.: 20028-7002

**AMENDMENTS TO THE CLAIMS**

Claim 1 (previously presented): An apparatus, comprising:

an optical transport for receiving an electromagnetic wave having a first property, said transport having a waveguiding region and one or more guiding regions coupled to said waveguiding region; and  
a transport influencer, operatively coupled to said optical transport and having at least a portion integrated with one or more guiding regions of said one or more guiding regions, for affecting a second property of said transport, wherein said second property influences said first property of said wave.

Claim 2 (original): The apparatus of claim 1 wherein said first property is a polarization plane and said second property is a magnetic field in said transport.

Claim 3 (original): The apparatus of claim 1 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport.

Claim 4 (original): The apparatus of claim 2 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport to alter said polarization plane of said wave.

Claim 5 (original): The apparatus of claim 2 wherein said influencer alters said polarization plane by changing a rotation angle of at least one component of said polarization plane in a range from about zero degrees to about ninety degrees.

Application No.: 10/812,294

4

Docket No.: 20028-7002

Claim 6 (original): The apparatus of claim 1 wherein said transport is a fiber waveguide including a core and a cladding corresponding to one or more of said one or more guiding regions and wherein said influencer includes a magnetic material integrated with said cladding.

Claim 7 (original): The apparatus of claim 6 wherein said magnetic material includes permanent magnetic material.

Claim 8 (original): The apparatus of claim 6 wherein said magnetic material is selectively magnetized responsive to an electric current.

Claim 9 (original): The apparatus of claim 6 wherein said magnetic material is integrated into said fiber waveguide.

Claim 10 (previously presented): An apparatus, comprising:  
an optical transport for receiving an electromagnetic wave having one of a right hand circular polarization or a left hand circular polarization, said transport having a waveguiding region and one or more guiding regions coupled to said waveguiding region; and  
a transport influencer, operatively coupled to said optical transport and having at least a portion integrated with one or more guiding regions of said one or more guiding regions, for controllably affecting a magnetic field of said transport to change a polarization angle of said wave.

Claim 11 (original): The apparatus of claim 10 wherein said influencer changes a polarization angle over a range of about zero degrees to about ninety degrees.

Claim 12 (original): The apparatus of claim 10 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport to alter said polarization angle.

Application No.: 10/812,294

5

Docket No.: 20028-7002

Claim 13 (original): The apparatus of claim 11 wherein said influencer is responsive to a control signal for changing said polarization angle.

Claim 14 (original): The apparatus of claim 12 wherein said influencer is responsive to a control signal for changing said polarization angle.

Claim 15 (original): The apparatus of claim 11 wherein said influencer alters said polarization angle over a range from about zero degrees to about ninety degrees.

Claim 16 (original): The apparatus of claim 12 wherein said influencer alters said polarization angle over a range from about zero degrees to about ninety degrees.

Claim 17 (previously presented): The apparatus of claim 10 wherein said transport is a fiber waveguide including a core and a cladding corresponding to one or more guiding regions of said one or more guiding regions and wherein said influencer includes a magnetic material integrated with said cladding.

Claim 18 (original): The apparatus of claim 6 wherein said magnetic material includes permanent magnetic material.

Claim 19 (original): The apparatus of claim 6 wherein said magnetic material is selectively magnetized responsive to an electric current.

Claim 20 (original): The apparatus of claim 6 wherein said magnetic material is integrated into said fiber waveguide.

Claim 21 (previously presented): A method, comprising:  
receiving an electromagnetic wave having a first property at an optical transport, said transport having a waveguiding region and one or more guiding regions coupled to said waveguiding region; and

Application No.: 10/812,294

6

Docket No.: 20028-7002

affecting a second property of said transport using a transport influencer coupled to said optical transport and having at least a portion integrated with one or more guiding regions of said one or more guiding regions, wherein said second property influences said first property of said wave.

Claim 22 (original): The method of claim 21 wherein said first property is a polarization plane and said second property is a magnetic field in said transport.

Claim 23 (original): The method of claim 21 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport.

Claim 24 (original): The method of claim 22 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport to alter said polarization plane of said wave.

Claim 25 (original): The method of claim 22 wherein said influencer alters said polarization plane by changing a rotation angle of at least one component of said polarization plane in a range from about zero degrees to about ninety degrees.

Claim 26 (previously presented): The method of claim 21 wherein said transport is a fiber waveguide including a core and a cladding corresponding to one or more guiding regions of said one or more guiding regions and wherein said influencer includes a magnetic material integrated with said cladding.

Claim 27 (original): The method of claim 26 wherein said magnetic material includes permanent magnetic material.

Application No.: 10/812,294

7

Docket No.: 20028-7002

Claim 28 (original): The method of claim 26 wherein said magnetic material is selectively magnetized responsive to an electric current.

Claim 29 (original): The method of claim 26 wherein said magnetic material is integrated into said fiber waveguide.

Claim 30 (previously presented): An apparatus, comprising:  
means for receiving an electromagnetic wave having a first property at an optical transport, said transport having a waveguiding region and one or more guiding regions coupled to said waveguiding region; and  
means, operatively coupled to said receiving means and having at least a portion integrated with one or more guiding regions of said one or more guiding regions, for affecting a second property of said transport using a transport influencer coupled to said optical transport, wherein said second property influences said first property of said wave.

Claim 31 (original): The apparatus of claim 30 wherein said first property is a polarization plane and said second property is a magnetic field in said transport.

Claim 32 (original): The apparatus of claim 30 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport.

Claim 33 (original): The apparatus of claim 31 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport to alter said polarization plane of said wave.

Claim 34 (original): The apparatus of claim 31 wherein said influencer alters said polarization plane by changing a rotation angle of at least one

Application No.: 10/812,294

8

Docket No.: 20028-7002

component of said polarization plane in a range from about zero degrees to about ninety degrees.

Claim 35 (previously presented): The apparatus of claim 30 wherein said transport is a fiber waveguide including a core and a cladding corresponding to one or more guiding regions of said one or more guiding and wherein said influencer includes a magnetic material integrated with said cladding.

Claim 36 (original): The apparatus of claim 35 wherein said magnetic material includes permanent magnetic material.

Claim 37 (original): The apparatus of claim 35 wherein said magnetic material is selectively magnetized responsive to an electric current.

Claim 38 (original): The apparatus of claim 35 wherein said magnetic material is integrated into said fiber waveguide.

Claim 39 (previously presented): An apparatus, comprising:  
a fiber waveguide for receiving an electromagnetic wave having a particular polarization, said waveguide having a core and one or more guiding regions disposed around said core; and  
a variable magnetic field generating structure, a portion of which is integrated with and operatively to one or more of said guiding regions, for producing a controllable variable magnetic field in said core responsive to a control signal, said controllable variable magnetic field variably changing said particular polarization responsive to said control signal.

Claim 40 (new): A computer program product comprising a computer readable medium carrying program instructions for operating an apparatus when executed using a computing system, the executed

Application No.: 10/812,294

9

Docket No.: 20028-7002

program instructions executing a method, the method comprising:  
receiving an electromagnetic wave having a first property at an optical transport, said transport having a waveguiding region and one or more guiding regions coupled to said waveguiding region; and  
affecting a second property of said transport using a transport influencer coupled to said optical transport and having at least a portion integrated with one or more guiding regions of said one or more guiding regions, wherein said second property influences said first property of said wave.

Claim 41 (new): The computer program product of claim 40 wherein said first property is a polarization plane and said second property is a magnetic field in said transport.

Claim 42 (new): The computer program product of claim 40 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport.

Claim 43 (new): The computer program product of claim 41 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport to alter said polarization plane of said wave.

Claim 44 (new): The computer program product of claim 41 wherein said influencer alters said polarization plane by changing a rotation angle of at least one component of said polarization plane in a range from about zero degrees to about ninety degrees.

Claim 45 (new): The computer program product of claim 40 wherein said transport is a fiber waveguide including a core and a cladding corresponding to one or more guiding regions of said one or more

Application No.: 10/812,294

10

Docket No.: 20028-7002

guiding regions and wherein said influencer includes a magnetic material integrated with said cladding.

Claim 46 (new): The computer program product of claim 45 wherein said magnetic material includes permanent magnetic material.

Claim 47 (new): The computer program product of claim 45 wherein said magnetic material is selectively magnetized responsive to an electric current.

Claim 48 (new): The computer program product of claim 45 wherein said magnetic material is integrated into said fiber waveguide.

Claim 49 (new): A propagated signal on which is carried computer-executable instructions which when executed by a computing system performs a method, the method comprising:  
receiving an electromagnetic wave having a first property at an optical transport, said transport having a waveguiding region and one or more guiding regions coupled to said waveguiding region; and  
affecting a second property of said transport using a transport influencer coupled to said optical transport and having at least a portion integrated with one or more guiding regions of said one or more guiding regions, wherein said second property influences said first property of said wave.

Claim 50 (new): The signal of claim 49 wherein said first property is a polarization plane and said second property is a magnetic field in said transport.

Claim 51 (new): The signal of claim 49 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport.

Application No.: 10/812,294

11

Docket No.: 20028-7002

Claim 52 (new): The signal of claim 50 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport to alter said polarization plane of said wave.

Claim 53 (new): The signal of claim 50 wherein said influencer alters said polarization plane by changing a rotation angle of at least one component of said polarization plane in a range from about zero degrees to about ninety degrees.

Claim 54 (new): The signal of claim 49 wherein said transport is a fiber waveguide including a core and a cladding corresponding to one or more guiding regions of said one or more guiding regions and wherein said influencer includes a magnetic material integrated with said cladding.

Claim 55 (new): The signal of claim 54 wherein said magnetic material includes permanent magnetic material.

Claim 56 (new): The signal of claim 54 wherein said magnetic material is selectively magnetized responsive to an electric current.

Claim 57 (new): The signal of claim 54 wherein said magnetic material is integrated into said fiber waveguide.